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10/019,587	03/13/2002	Shigeki Kanbara	TPS014-US1	1699

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EXAMINER	
JORGENSEN, LELAND R	
ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/019,587

**Applicant(s)**

KANBARA ET AL.

**Examiner**

Leland R. Jorgensen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 7 and 10 - 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 6, 7 and 10 - 15 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/31/02; 5/27/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it has two paragraphs. Correction is required. See MPEP § 608.01(b).

### ***Claim Objections***

2. Claim 5 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on any other multiple dependant claims (specifically claim 40. See MPEP § 608.01(n). Accordingly, the claim has not been further treated on the merits.

No claims 8 and 9 were submitted.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1 – 3, 6, 10, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kambara et al., USPN 6,091,406.

**Claim 1.** Kambara teaches an acoustic contact detecting device [coordinate input device] comprising a substrate [propagation medium 1] having a top surface [display area 2]; an acoustic wave transducer [transmitting transducer for propagating bulk waves such as piezoelectric transducer 4a and 4b] coupling with a first wave [bulk waves] representative of a bulk wave being propagated through said substrate along an axis crossing said top surface; a diffractive acoustic wave mode coupler [first gratings 5 a and 5b] having a mode of converted wave having high energy on said top surface and functioning for coupling a second wave [surface waves] being propagated along an axis parallel to said top surface with said first wave; and a means for detecting a perturbation in energy of said second wave [signal received by piezoelectric transducers 10a and 10b]. Kambara, col. 17, lines 61 – col. 18, lines 50; and figure

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5. A planar wiring [wire cables] supplies said acoustic wave transducer with electric power.

Kambara, col. 19, lines 45 – 50.

**Claim 2.** Kambara teaches a coordinate input device of touch type [coordinate input device] comprising a propagation medium [1] having a top surface [display area 2] capable of propagating an acoustic wave; a bulk wave generation means [transmitting transducer for propagating bulk waves such as piezoelectric transducer 4a and 4b] for propagating a bulk wave in a crossing direction with respect to said top surface of said propagation medium; an acoustic wave generation means [first gratings 5 a and 5b] for converting said bulk wave into an acoustic wave [surface wave] and propagating said acoustic wave on the top surface of said propagation medium; and a detecting means [piezoelectric transducers 10a and 10b] for detecting a scatter in the surface of the acoustic wave from said acoustic wave generation means. Kambara, col. 17, lines 61 – col. 18, lines 50; and figure 5. A planar wiring [wire cables] supplies said acoustic wave transducer with electric power. Kambara, col. 19, lines 45 – 50.

**Claim 3.** Kambara teaches that said acoustic wave transducer is composed of a piezoelectric vibrator [piezoelectric transducer 4a and 4b]. Kambara, col. 8, lines 47 – 57; col. 17, line 61 – col. 18, line 12; col. 19, lines 61 – 64; and figure 5.

**Claim 6.** Kambara teaches that said wiring is formed on a back surface of the substrate. Kambara, col. 17, line 61 – col. 18, line 12.

**Claim 10.** Kambara teaches a touch input device [coordinate input device], comprising a substrate [propagation medium 1] having a first planar surface [display area 2] and a second planar surface; an acoustic wave transducer [transmitting transducer for propagating bulk waves such as piezoelectric transducer 4a and 4b] for generating acoustic waves, the acoustic wave

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transducer coupled to the second planar surface such that generated acoustic waves are transmitted to the first planar surface. Kambara, col. 17, lines 61 – col. 18, lines 50; col. 35, lines 9 - 18; and figure 5. A planar wiring [wire cables] supplies said acoustic wave transducer with electric power. Kambara, col. 19, lines 45 – 50.

**Claim 15.** Kambara teaches a linear array of acoustically reflective elements [first gratings 5 a and 5b] on the first planar surface and wherein the planar wiring resides on a portion of the second planar surface substantially opposite to the linear acoustically reflective elements. Kambara, col. 17, lines 61 – col. 18, lines 50; col. 35, lines 9 - 18; and figure 5.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 7, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kambara et al, in view of Grunwald et al., USPN 5,009,708.

**Claim 4.** Kambara does not teach that the wiring is formed by using conductive paste.

Grunwald teaches forming wiring on a substrate by using conductive paste. Grunwald, col. 1, lines 16 – 34; col. 3, lines 3 – 7.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the conductive paste as taught by Grunwald with the acoustic contact detecting

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device to more easily manufacture the device. Grunwald, col. 2, lines 36 – col. 59; col. 4, lines 46 - 51.

**Claim 7.** Kambara teaches a substrate [propagation medium 1] for an acoustic detection device having a top surface [display area 2] comprising an acoustic wave transducer [transmitting transducer for propagating bulk waves such as piezoelectric transducer 4a and 4b] coupled with a bulk wave having a propagation axis crossing said top surface in said substrate; a diffractive acoustic wave mode coupling structure [first gratings 5 a and 5b] formed in the proximity to said surface for converting acoustic energy of the bulk wave into a wave [surface wave] to be propagated along an axis parallel to said top surface; and a means [piezoelectric transducers 10a and 10b] for detecting the converted acoustic wave energy corresponding to a position of a perturbation event. Kambara, col. 17, lines 61 – col. 18, lines 50; and figure 5. A planar wiring [wire cables] supplies said acoustic wave transducer with electric power.

Kambara, col. 19, lines 45 – 50

Kambara does not specifically teach that the wiring is printed on.

Grunwald teaches that wiring is applied by printing. Grunwald, col. 1, lines 23 – 29.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the printed wiring as taught by Grunwald with the acoustic contact detecting device to more easily manufacture the device. Grunwald, col. 2, lines 36 – col. 59; col. 4, lines 46 - 51.

**Claim 13.** Grunwald teaches that the conductive paste is a composite conductive material. Grunwald, col. 1, lines 23 – 29.

**Claim 14.** Grunwald teaches that wiring is applied by transfer printing. Grunwald, col. 1, lines 23 – 29.

6. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kambara et al. in view of Ishikawa et al., USPN 5,250,869.

**Claim 11.** Kambara teaches that the transducer comprise electrodes and that the electrodes are connected to the planar wiring [wire cables]. Kambara, col. 8, lines 47 – 57; col. 22, lines 16 – 19; col. 23, lines 60 – 64; and col. 35, lines 9 – 18.

Kambara does not specifically teach the details of the electrodes as taught in claim 11.

Ishikawa et al., teaches a means for connecting the planar wiring to a acoustic wave transducer [composite piezoelectric vibrator 1] comprises a first electrode [electrode 3] that couples a first portion of a first side of the transducer to a first portion of the planar wiring [round terminal] and a second electrode [electrode 5] that couples a second portion of the first side of the transducer to a second portion of the planar wiring [single wiring] wherein the second electrode extends from the first side of the transducer to a second side of the transducer opposed to the first portion of the first side of the transducer [through ground terminal]. Ishikawa, col. 5, lines 20 – 30; col. 9, line 40 – col. 10, line 4; and figures 6, 21, & 22.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the composite piezoelectric vibrator including the electrodes as taught by Ishikawa with the touch input device as taught by Kambara to better control the shape of the bulk wave. Kambara invites one to consider using different piezoelectric elements as transducers.

The acoustic source need not be a simple piezoelectric element with simple top and bottom electrodes. According to the present example, more complex acoustic sources are considered. These may include multiple piezoelectric elements and/or piezoelectric elements having complex electrode arrangements, as shown in FIG. 23.



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Kambara, col. 35, line 66 – col. 36, line 4. Ishikawa invites such combination by teaching,

As explained previously, the present invention is easily capable of improving an ultrasonic beam characteristic in the short axis direction. Moreover, realization of easy and free distribution of amplitude intensity with the shape of the electrode may be a contribution to development of the industry by the present invention.

Moreover, the ultrasonic transducer having a uniform beam pattern for short to long distance areas can also be manufactured easily.

In addition, since a composite piezoelectric vibrator is used, a convex type or concave type transducer having a curvature may also be manufactured easily. Moreover, it is also possible to easily improve the ultrasonic beam characteristic in the short axis direction utilizing the feature of the present invention and desired distribution of the amplitude intensity can be realized easily only changing the shape of the electrode.

Ishikawa, col. 10, lines 7 – 23.

**Claim 12.** Ishikawa teaches that the first portion of the planar wiring is the ground terminal and the second portion of the planar wiring is the signal terminal. Ishikawa, col. 5, lines 20 – 30; col. 9, line 40 – col. 10, line 4; and figures 6, 21, & 22. It is inherent, therefore that the first portion, the ground terminal, be insulated from the second portion, the signal terminal.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kent, USPN 5,591,945 and Davis-Cannon et al, USPN 5,739,479, each teach a acoustic wave touch screen.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leland R. Jorgensen whose telephone number is 571-272-7768. The examiner can normally be reached on Monday through Friday, 10:00 am through 6:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571-272-3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

On July 15, 2005, the Central FAX Number will change to 571-273-8300. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number. To give customers time to adjust to the new Central FAX Number, faxes sent to the old number (703-872-9306) will be routed to the new number until September 15, 2005. After September 15, 2005, the old number will no longer be in service and 571-273-8300 will be the only facsimile number recognized for "centralized delivery".

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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**KENT CHANG**  
**PRIMARY EXAMINER**